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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	**CP-2018-04-23-09** **Date: 18/05/2018**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer's Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	23-04-18
Sample ID No	:	2018-04-23-09 /02
Customer ID	:	PCC
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M10 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	18/05/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M10	20/04/2018	18/05/2018	151.50 X 151.48 X 151.11	22948	8.270	317.2	13.8	13.5
2	PCC	M10	20/04/2018	18/05/2018	150.63 X 149.38 X 150.52	22502	8.230	299.3	13.3	
3	PCC	M10	20/04/2018	18/05/2018	151.21 X 151.33 X 150.32	22884	8.130	308.5	13.5	

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2018-03-31-17** **Date: 05-04-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	31-03-18
Sample ID No	:	2018-03-31-17 /02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	02-04-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	103	103	2.1	97.9	90-100
3	10 mm	3002	3105	62.1	37.9	25-55
4	4.75 mm	1713	4818	96.4	3.6	0-10
5	Pan	182	5000	100	0	-

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2018-03-31-17** **Date: 05-04-18**

Sample ID No : 2018-03-31-17 /02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.5	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.8	
3	Specific Gravity	2.64	–
4	Bulk Density(Loose) (Kg/l)	1.49	–
5	Bulk Density(Compacted) (Kg/l)	1.52	–
6	Water Absorption(%)	0.12	–
7	Aggregate crushing Value(%)	24.4	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.8	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	CP-2018-03-31-17 **Date: 04-04-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer's Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	31-03-18
Sample ID No	:	2018-03-31-17 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	02-04-18
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	3.23	–
2	Finess by Air permeablity method (m^2/kg,Min)	278.7	225m^2/kg, Min
3	Density (gm/cc)	3.12	–
4	Standard Consistency (%)	29.0%	Not specified
5	Initial Setting time	175 minutes	Not less than 30 minutes
6	Final Setting time	255 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2mm	Not more than 10 mm

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	CP-2018-03-31-17 **Date: 30-04-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer's Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	31-03-18
Sample ID No	:	2018-03-31-17 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	02-04-18
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	38.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	54.5N/mm^2	Not less than 53 N/mm^2

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2018-03-31-17 **Date: 05-04-18**

Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Address : Yelahanka Sub Division, BBMP, Bangalore.

Project Name : Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.

Agency : Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.

Customer's Reference : EE(YNK.D)E-PMT-09/W.O/09/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 31-03-18

Sample ID No : 2018-03-31-17 /03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 02-04-18

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	82	82	8.2	91.8	90-100	90-100	90-100	95-100
3	2.36 mm	154	236	23.6	76.4	60-95	75-100	85-100	95-100
4	1.18 mm	178	414	41.4	58.6	30-70	55-90	75-100	90-100
5	600 micron	189	603	60.3	39.7	15-34	35-59	60-79	80-100
6	300 micron	176	779	77.9	22.1	5-20	8-30	12-40	15-50
7	150 micron	134	913	91.3	8.7	0-10	0-10	0-10	0-15
8	Pan	87	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2018-03-31-17

Date: 05-04-18

Sample ID No : 2018-03-31-17 /03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.79	–
2	Specific Gravity	2.57	–
3	Material finer than 75 micron(%)	6.2	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST REPORT OF PRECAST COVER SLAB

Lab ID	:	**CP-2018-03-31-17**	**Date: 06-04-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.	
Address	:	Yelahanka Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.	
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.	
Customer's Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	31-03-18	
Sample ID No	:	2018-03-31-17 /06	
Sample Type /Size	:	Precast Cover Slab	
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete	
Date of test	:	02/04/2018	

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
2	Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
3	Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2018-05-26-01** **Date: 28-05-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	26-05-18
Sample ID No	:	2018-05-26-01/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	26-05-18

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	305.2	305.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	78.9	79.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	25.9	25.9
6	Aggregate impact value (Mean of two tests)	Peeentage	25.9	

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	CP-RW-2018-05-26-01 **Date: 28-05-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	26-05-18
Sample ID No	:	2018-05-26-01/01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	26-05-18
Oven Dry Weight	:	10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	302	302	3.0	97.0	95-100
22.4	2316	2618	26.2	73.8	60-80
11.2	2364	4982	49.8	50.2	40-60
4.75	2326	7308	73.1	26.9	25-40
2.36	1629	8937	89.4	10.6	15-30
0.6	537	9474	94.7	5.3	8-22
0.075	1138	10612	106.1	-6.1	0-5

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2018-05-26-01** **Date: 28-05-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	26-05-18
Sample ID No	:	2018-05-26-01/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	26-05-18

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	9.9%	
Combined Flakiness and Elongation Index for WMM	20.7%	

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR DENSE BITUMINOUS MACADAM

Lab ID	:	**CP-RW-2018-06-06-03** **Date: 09-06-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-06-18
Sample ID No	:	2018-06-06-03/01
Type of Mix	:	DBM (Dense Bituminous Macadam)
Date of test	:	06-06-18

Table 500-6 : Physical Requirements fo Coarse Aggregate for Dense Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	10.8	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	11.9		
Strength	Aggregate Impact Value	22.9	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.65	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.27	Maximum 2%	IS:2386 Part III

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TEST RESULTS OF GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2018-06-06-03	**Date: 09-06-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.	
Address	:	Yelahanka Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.	
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.	
Customer Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	06-06-18	
Sample ID No	:	2018-06-06-03/01	
Type of Mix	:	DBM-Plant (Dense Bituminous Macadam)	
Date of test	:	06-06-18	
Weight of Sample	:	5000 Grams	

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	159	159	3.18	96.82	90-100
19	1025	1184	23.68	76.32	71-95
13.2	547	1731	34.62	65.38	56-80
4.75	1136	2867	57.34	42.66	38-54
2.36	721	3588	71.76	28.24	28-42
0.3	1036	4624	92.48	7.52	7-21
0.075	253	4877	97.54	2.46	2-8
PAN	123	5000	0.00	0	0

Note:-
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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2018-06-06-03** **Date: 09-06-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	06-06-18
Sample ID No	:	2018-06-06-03/01
Type of Mix	:	DBM (Dense Bituminous Mecadam)
Date of test	:	06-06-18

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.65	11.22	9KN(Min)
2	Marshal flow at 60°C, mm	3.26	3.44	2-4
3	Percent air Voids	4.26	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.53	14.78	13-15
5	Percent Voids filled with Bitumen(VFB %)	70.98	71.37	65-75
6	Density, g/cc	2.45	2.43	–

Note:-
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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	CP-RW-2018-06-12-02 **Date: 14-06-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-06-18
Sample ID No	:	2018-06-12-02/01
Type of Mix	:	BC Plant (Bituminous Concrete)
Date of test	:	12-06-18
Oven Dry Weight	:	5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	76	76	1.5	98.5	90-100
9.5	687	763	15.3	84.7	70-88
4.75	906	1669	33.4	66.6	53-71
2.36	687	2356	47.1	52.9	42-58
1.18	478	2834	56.7	43.3	34-48
0.6	489	3323	66.5	33.5	26-38
0.3	528	3851	77.0	23.0	18-28
0.15	467	4318	86.4	13.6	12-20
0.075	300	4618	92.4	7.6	4-10
PAN	382	5000	100	0.0	0

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2018-06-12-02** **Date: 14-06-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	12-06-18
Sample ID No	:	2018-06-12-02/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	12-06-18

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.35	11.56	10KN(min)
2	Marshal flow at 60°C, mm	3.37	3.32	2-4
3	Percent air Voids	4.26	4.37	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.61	14.36	13-15
5	Percent Voids filled with Bitumen(VFB %)	70.37	71.36	65-75
6	Density, g/cc	2.26	2.24	–

Note:-
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TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2018-05-28-06** **Date: 29-05-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Improvements of roads and drains at Kenchenahalli village in ward No-02 of Yelahanka sub division.
Agency	:	Sri.Ashok.G, No:54,1st Main Road, 3rd Cross , Vyalikaval, Bangalore.
Customer's Reference	:	EE(YNK.D)E-PMT-09/W.O/09/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	28-05-18
Sample ID No	:	2018-05-28-06/01
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	28-05-18

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	65	60 to 70
2	Softening Point, °C	43.8	Min. 40°C
3	Ductility, cm	85	Min. 75cm
4	Flash point, °C	235	Min. 220°C
	Fire point, °C	255	

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